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ABSTRACT

Sweden has recently introduced a new curriculum and grading system in its school system. Earlier change strategies based on information dissemination failed because teachers did not view the reforms as being based on reality. This paper presents a research design to identify the internal and external factors that influence change in Swedish secondary teachers' instructional patterns. The conceptual framework stresses the factors of experiential learning, teachers' cognitions of teaching and learning, local organizational structure, and school leadership. It is argued that changes occur as a result of the interplay between the individual and context. Therefore, changes in organizational structure must be accompanied by changes in the teachers' cognitions about teaching and learning. The proposed research methods include surveys of headmasters, managers, and teachers in every upper-secondary school in Sweden and interviews with teachers in six selected schools. Symbolic interaction theory provides the basis for understanding the mutual and complementary character of teacher and student roles. Four figures are included. (LMI)

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WHY DO CERTAIN TEACHERS CHANGE THEIR INSTRUCTIONAL PATTERNS AND WHAT IMPORTANCE DO THE SCHOOL LEADERS HAVE IN THAT CHANGE?

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1. BACKGROUND.

The developmental pace in the Swedish school system has lately been very high. A new curriculum and a new grading system has been introduced. The new curriculum, like the old ones, stresses the importance of a varied way of working in the schools. That means to have less of the lecturing approach and more of the student oriented educational approach.

The importance of the school leaders for the implementation of the changes of instructional patterns is stressed by the local and central authorities. Their possibilities to live up to these expectations depend on their own leadership qualities and the leadership organization of the school. The school organization can either be a restraining or a facilitating factor for educational changes. The school is often seen as a stable organization and many strategies have been tried to change the main instructional patterns. Earlier a strategy based on information and spreading of central research result was used to influence the teachers. This strategy has not been very successful and is now replaced by a strategy based upon teachers' own expeiences of developmental projects at their own schools. The results of the research and development instituitions are often rejected because the teachers mean that the projects are not based on reality.

If a participation strategy will be more successful than the earlier information strategies we need to know more about what is of importance in the teachers' own context when it comes to changing their instructional patterns.

Research questions.

The main question is: How come that certain teachers change their instructional pattern and others don't?

Out of this main question follows:

Are schools that are dominated by a lecturing approach, organized differently from schools with a more student-oriented educational approach?

Are schools where many teachers change their instructional pattern organized differently from schools where none or just a few teachers change?

Is it an effective strategy to change the local organization if you want to change the teaching approach at a school?

Are there qualitative differences between school leaders in schools where the lecturing approach dominates compared to schools where students are more actively involved in investigations.

Are there qualitative differences between school leaders in schools where many teachers change their instructional pattern compared to schools where none or just a few teachers change?

THEORETICAL PERSPECTIVE AND GENERAL ASSUMPTIONS.

A basic epistemological assumption is that the charater of the influence process is not of a simple cause - effect relationship. It is considered to be a mutual, didactic process where different forces influence more or less at different moments and in different constellations. The change process can best be described as a spiral movement.

The analysis of factors influencing the change of instructional pattern will be carried out with a field theory model as an over riding theoretical point of departure (Levin (1963). Levin stresses the importance of wholeness and the mutually interdependance between its parts. "What is important in field theory is the way the analysis proceeds. Instead of picking out one or another isolated element within a situation, the importance of which cannot be judged without consideration of the situation as a whole, field theory finds it advantageous, as a rule, to start with a characterization of the situation as a whole. After this first approximation, the various aspects and parts of the situation undergo a more and more specific and detailed analysis."
"A totality of coexisting facts which are conceived of as mutually interdependant is called a field. Psychology has to view the life space, including the person and his environment, as one field."
"To describe a situation "objectively" in psychology actually means to describe the situation as a totality of those facts and of only those facts which make up the field of that individual".

The first problem is to define the force field in an appropriate way. What factors should be considered to be within respectively outside the force field? Which ones are central and which ones are peripheral? If you define the issue too narrow it is easy to study in a strictly positivistic scientific way but the results may be false because important and relevant context factors are left out. If you take too many factors into the study it will on the other hand be impossible to study the fenomenon according to scientific principles.

In this project three different but interconnected subsystems will be studied; the interaction between the students and the teacher in the teaching situation, the local organization of each separate school and the school leadership.

The basic assumptions are:

1. Cognitions about effective learning determine strategies of instruction among teachers.

2. Experiences of the interactional processes between students and teachers are the basis of teachers' knowledge about the learning processes.

3. The cognitions about the learning and instructional situation at school are developed out of the experiences that teachers make at school. These experiences are depending on the actual organization of such important school components as the time table, the design of the class rooms etc

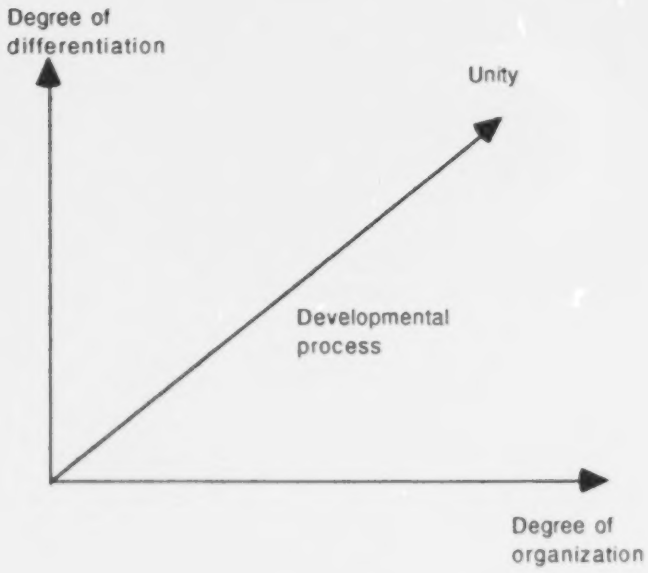
The local organization works in two ways. Directly by restricting what is possible to do or not to do and indirectly through setting the stage for experiential learning.

4. The school leaders have a responsibilty to create an organization of the school in accordance with its educational aims.

CHANGE AND DEVELOPMENT.

Before I will describe these three subsystems it is important to make clear what is meant by change and development as this is the main issue in the study. Development is usually defined as a change in a desired direction. Miles & Ekholm (1985) define school improvement as "a systematic, sustained effort aimed at change in learning

conditions and other related internal conditions in one or more schools, with the ultimate aim of accomplishing educational goals more effectively."
Levin has a more process-oriented definition of development. According to Levin a high level of development means a high degree of differentiation, that is many relatively independant parts, that are structured to a unity in line with an organizing idea. The developmental process can be illustrated in the following way:



An increase in differentiation results in new formations by restructuring of the units within the wholenes. This restructuring can lead to a fundamental change, that is , a difference in quality and not just quantity, when it does not just mean refinement within the same basic organizing idea but a shift of the basic idea. Levins definition is non-normativ in the sense that it does not tell anything about the content of a more developed idea compared to a less developed idea..

This study will focus on changes that means a profound shift of a techer's basic instructional principle. Changes in instructional patterns implying refinement and specialization, without a change of the basic educational principle, will not be considered as a change. I will expound that under the headline "Different instructional patterns and educational approaches".

Conditions for change.

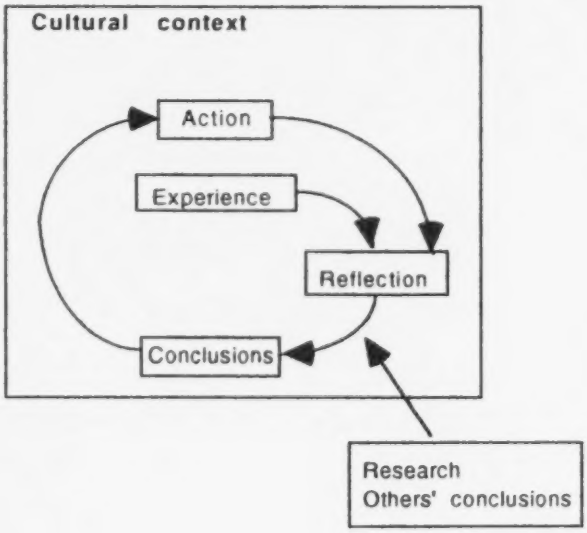
According to Ekholm (1976) improvement does not occur because it is possible. There need to be some kind of necessity for change to occur. On the other hand it is not enough with necessity regardless if it comes from within or without if not the possibilities are at hand. The character of these possibilities can be organizational for example the time-table, or individual, for example the own competens. Internal necessity can origin from an incongruens between the own educational values and the factual instructional pattern. Sometimes the necessity can be sheer boredom with routinized teaching habits. More heterogenous groups of students is an example of external necessity where the teacher has to change his educational pattern to be successful compared to a situation with more homogenous student groups. Changes occur as a result of the interplay between the individual and the context. The organizational structure of a school is not enough to change teaching habits there must also be some kind of change in the teacher's cognintions about teaching and learning.

This study will focus on both internal and contextual necessities and possibilities for profound changes in teachers instructional patterns.

EXPERIENTIAL LEARNING AND INTERNAL CHANGE.

Schön (1983) argue for the importance of experiential learning for developing professional competens.This means that experiences of the interactional processes between the students and the teachers are the basis of teachers' knowledge about the learning processes.
One of the assumptions in this study is, that the cognitions and conclusions of the individual teacher, concerning learning and teaching, mainly is an effect of concious or unconcious learning from experiences of the daily working situation.

To enhance the planned and more structured experiential learning process is a good basis for improvement work in a professional organization. Experiential learning can be desribed as a process of reflections and conclusions out of one's own experiences. These more or less concious conclusions are the basis for future actions which gives new experiences for reflection and so forth. The learning process is best described as a three-dimensional spiral but will here be illustrated in a somewhat misleading two-dimensional figure.



The conclusions are not drawn in splendid isolation but is influenced by research, others' conclusions and the cultural context within which the conclusions are drawn.

Experiential learning as a preservatory or developmental force.

Experiential learning is usually a very good preservative so you have to take some precautions if you are about to have it as a developmental device. People has a tendency to look for evidence that strengthens their own earlier conclusions and ignore or explain away evidence that is contradictory to their held beliefs. In this study we are intersted in more profound changes in instructional patterns, changes that includes changes in the conclusions. To make changes in conclusions to happen there probably need to be a lot of experiences that is contradictory to earlier held beliefs. Experiences that cannot be explained away. Another possibility is that the cultural context change which can lead to a reinterpretation of earlier experiences with new conclusions as a result.

According to Shavelson & Stern (1981) teachers rutinize thier actions to restrict the huge flux of information they are meeting in the classroom. Probably this means that information that are contradictory will be sorted out in the first hand which will strengthen the preservatory effect of experiential learning. To reduce the preservatory effect and enhance the developmental potential the teacher needs to be confronted with others' conclusions and research findings that are contradictory to own conclusions. Results from improvement strategies based on information and research has often been disappointing. It seems as if the own experiences outweighes the conclusions from research and others that are not considered as relevant persons. A more effective way could be to see to, that the teachers will be confronted with reactions from significant others, that is, collegues and own students. To build up an evaluation system with the focus on the learning and teaching processes.

We also need to put more emphasis on helping the teachers to learn more from their own experiences. Schön (1978) makes a distinction between single-loop and double-loop learning. Single-loop learning means that you learn within the contextual culture while double-loop means a learning process that leads to questioning of the own preconceptions and the contextual culture and frames. The local organization is one of these frames and influences teachers' conclusions in an indirect way. If more profound educational changes in the way they are defined in this study, are going to occur there need to be more of the double-loop learning process among the teachers, otherwise there will just be refinements within the original teaching pattern.

To summarize: An internal necessity to change can more easily develop out of experiential learning especially if double-loop learning and internal evaluation processes are stressed.

THE CONTEXT AND EXTERNAL NECESSITY.

It is not poosible to understand or explain the teacher's instructional pattern merely from her own cognitions and conclusions about learning and teaching. A teacher's possibilities to realize her educational intentions are also dependant upon structural factors in the local school organization. Miles & Ekholm (1985) concludes that "*Organizational reconstruction* to accomplish the goals of a desired change is also a useful strategy. New roles, new teams, new schedules (as in the Hallonbergs case) can be created and tried on a pilot basis, then stabilized."

How a school ought to be organized can be argued from different point of views. From an organic point of view there are no such thing as a general ideal organization, there are just better or worse ways to organize depending upon the character of the environment and the kind of tasks.

Mintzberg (1979) identifies five different configurations of organization; "the machine bureaucracy, the divisionalized form, the professional bureaucracy, the simple structure and the adhocracy". The professional bureaucracy are thought to be an appropriate structure for universities and other professional organizations because the environment is supposed to be rather stable, the tasks complicated and the staff has a great deal of autonomy. These conclusions seem to me to be too general. The appropriate organization is more situationally conditioned than that. The professional bureaucracy is perhaps appropriate for a lecturing teaching pattern where each teacher is doing his lessons the way he likes it within the time-table without connections with other teachers or subject areas. Another educational approach built on the students experiences will inevitably lead to demands of cooperation between teachers from different disciplines because students' experiences are not fractioned in subject pieces. To work together from a common educational principle lessen the individual autonomy but may enhance the autonomy for a group of teachers, a teaching team.

The specific structure of the local school organization ought to be guided by the educational aims of the school. If a school has no common educational aims it must be very difficult to design an appropriate organization. If you do not regard the

educational aim when the organizational structure is built up there is a big risk that it will be incongruent with the teaching pattern you try to accomplish at the school. It is for example very difficult to succeed with a student and activity oriented educational approach if the duration of the lesson is limited to 40 minutes. The 40-minutes lesson contribute to conclusions that the lecturing approach is the most appropriate educational method. This conclusion may be false and be an effekt of the organizational context more than of the method itself. If the the duration of the lessons is prolonged to 120 minutes it probably will favor conclusions that student oriented approaches is successful and lecturing is not. The way an organization is structured will have an effect upon which educational approaches will be easier to accomplish and which will be harder to realize.

A congruent school is a school where the local organization support the realization of the educational aims of the school and an incongruent school is a school where the organization complicate the realization of the educational aims. There seem to be a tendency that schools strive towards a congruent state. That means that a certain organization will push away an educational approach that is not congruent with the organizational structure just like the human body pushes away a tissue transplanted from a foreign body. To prevent the exclusion of a profound change of educational approach the organization needs to be restructured.

Besides supporting a specific educational approach an organization also ought to support double-loop learning among the teachers. Double-loop learning facilitate profound changes. According to Morgan (1986) the following four guidelines summarize how this learning-oriented approach to organization and management can be developed. "First, encourage and value an openness and reflectivity that accepts error and uncertainty as an inevitable feature of life in complex and changing environments...Second, encourage an approach to the analysis and solution of complex problems that recognizes the importance of exploring different viewpoints...Third, avoid imposing structures of action upon organized settings.· This principle relates to the importance of inquiry-driven action...The forth principle facilitating the development of learning to learn relates to the need to make interventions and create organizational structures and processes that help implement the above principles."

In this study the factors of the local organization refer both to process variables like the communication system, the reward system, problemsolving strategies and evaluationsystem and more "static" variables that organize the use of time and space like the time-table, access to and quality of the library, size of student-groupings, access to grouprooms, work rooms for teachers and how the desks are arranged in the class rooms.

To summarize: The local organization is the reality in which the teachers draw their conclusions about the effectiveness of different educational strategies. The local organization are supposed to facilitate a certain educational approach and unfavor another approach. In this way it contributes both to which educational intentions that are easy to realize and to the development of the teachers' cognitions concerning teaching and learning.

DIFFERENT INSTRUCTIONAL PATTERNS AND EDUCATIONAL APPROACHES.

In this study the main focus will be on factors that influences the possibilities and necessities of profound changes in teachers' instructional patterns.

There are several ways to define profound changes of instructional patterns. One very simple operational definition is to let the teacher himself decide whether or not he has changed his instructional pattern in a profound way or not or to let colleques at the school be the judges. The disadvantage with these two models is that the basis for the study will be very different at different schools, depending on different definitions, which will cause problems with the analysis of data.

Another way is to compare implemented changes with some kind of a standard and from that decide whether or not they are to be considered as profound changes. The criteria could either be decided beforehand or after the data has been collected and analysed. Regardless of when you decide the criteria you need a standard built on some principle.

The symbolic interactionism could be used as a basis for understanding the mutual and complementary character of the roles of the teacher and the student.
Goffman (1974) uses the theatre as a metaphore and describes the social life in terms of performance, stage, requisities, actors and spectators. Used at school the performance correspond to a certain eduvational aim. There is a stage (the class room) with a requisit (for example the arrangment of the desks in the class room). The actors (the teacher and the pupils) form each others roles. The spectators (the parents, the universities,....) critisize or bring flowers depending upon how well the actors act in relation to the idea of the performance (the curriculum) and to the expectations of the spectators.

In line with the perspective of symbolic interactionism the following two performances could be used to describe two profoundly different ideas of the educationa task.

1. The student is regarded as a raw material that will be refined. The teacher is the worker that are responsible for the good quality of the product. If the product does not reach the quality asked for the worker is to blame. The worker on the other hand usually put the blame on the bad quality of the raw material, that is students with learning difficulties, or lazy students or... The student gets a very passive role in this performance in being the object of others efforts.

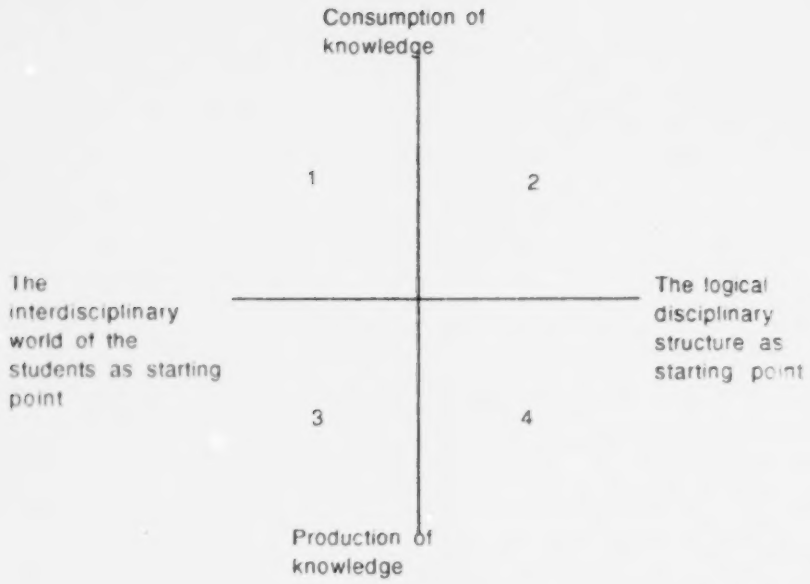
2. In another performance the students' conclusions from daily living is the raw material that will be refined. The student is the knowledge worker that is responsible for the refinement that will end up in knowledge based on science. The teacher is the supervisor whose primary task is to arrange a working situation that facilitates for the knowledge worker to refine his raw material. The other important task for the supervisor is to see to that the worker has apropriate tools with which he can work up the raw material. The tools correspond to the knowledge in different subject areas that the subject teachers possess.

A criterion of profound change based on a symbolic interactionistic perspective would imply a change between these different performances.

The standard can also be based on different philosophical foundations of education as idealism, realism, pragmatism, reconstructionism, behaviorism and existentialism. A profound change would mean that the central point in the educational approach is displaced from one philosophical foundation to another. A difficulty with this approach is that the study focuses on behavioral changes while these concepts represent wide philosophical belief systems.

A possibility to come closer to the behavioral level is to base the standard on patterns of different ways of working . Way of working is at the same time a description of a pattern of internally concistent instructional behaviors and an expression of a philosophy of education.
Two of the more central variables for the teacher's way of working are whether or not the teaching starts from the life world of the students or from the disciplinary world of the school and whether the students mainly consume delivered knowledge or produce it themselves.
These variables refer to the present educational debate, to the aims of the curriculum and to modern theories of society.

These two variables can be put together into a coordinate system as follows:



It is easy to recognize the two performances earlier described from a symbolic interactionistic perspective in this structure. A profound change would in this instance mean that the focus in the instructional pattern change from one quadrant to another. In this project I am most interested in changes to the third quadrant from one of the others.

To summarize: In this study the coordinate system described will be the standard towards which changes in instructional patterns will be estimated.

LEADERSHIP.

The kind of leadership that is considered effective is dependant upon many factors both within and outside the local school. The same leadership action on two different schools will probably meet quite different reactions depending on earlier history of leadership and the teachers' conceptions of their school leader. The school leader that succeed a "laissez-faire" leader will have other options than the one that succeeds an authoritarian leader. To be a shool leader at a school where the aims are agreed upon is different from being a school leader at an anarchistic, or with a more positive word spontenous, school. A school where the agreed upon educational pattern is congruent with the curriculum, create other conditions for leadership, than schools that do not want to teach according to the curriculum.

Leadership, power and organization are three concepts that often go together especially if you take on a political perspective on what organizations are all about. In this perspective you have to find ways to handle conflicts in the organization. The conflicts depend upon divergent interests among different groups and individuals. To manage these divergent interests you have to make some agreements about how to do that in a fair way, that is, how to distribute the power in the organization. We have built up different structures for this power distribution and named them differently. Each of these words contain the word -cracy in the end which means power. The usual ones are autocracy, democracy, bureaucracy technocracy and adhocracy. The role of a school leader will be very different depending upon what pattern of -cracy that dominates the local school and the school system. It will also differ if you have a pluralistic philosophy or an "unitary" frame of reference concerning the management of the school and school development.

Schools, like people, can be desribed as going through developmental stages and researchers have attempted to describe these stages in different ways. Different kind of leadership is often needed in different stages. Nielsen (1983) for example, describes

different stages of relevance for managing change from a consultant's point of view. He looked at the balance and inbalance in the school's inner structure and found the following six levels of development:

- labile balance
- perceived, but undefined imbalance
- perceived, and well-defined imbalance
- accepted imbalance, plus clarity about needed improvement effort
- improvement efforts have been institutionalized
- ongoing use of self-renewing and problem-solving strategies.

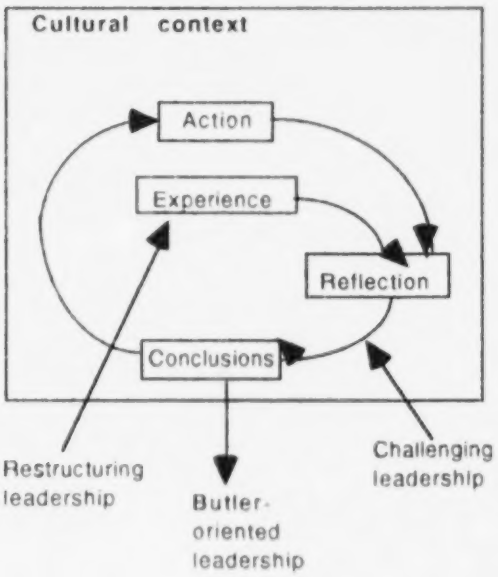
The importance of the school leader for the different stages in the teachers' experiential learning process will be studied in this project.
Leadership are categorized according to three different leadership approaches.

1. A butler-oriented leadership.
School leaders that trust the teachers' understanding of effective teaching- and learning-strategies. The school leaders' most important task is to facilitate for each teacher to make reality out of her intentions.

2. A challenging leadership.
School leaders that question the teachers' conclusions about teaching strategies and argue for other directions than those in action at the school.

3. A restructuring leadership.
Schoolleaders that change the local organization in order to change the reality in which experiential learning occur and thereby influence the teachers' conclusions.

The three different leadership approaches are related to the different stages of the teachers' experiential learning process in the following way:



To summarize: Leadership will be studied in terms of butler-oriented, challenging and restructuring approach in relation to teachers experiential learning spiral.

METHODOLOGICAL APPROACH

There have been many research projects about teacher-thinking and process-product studies but few studies about the importance of factors in the local organization for the development of teacher thinking. This study focus on the question: What internal and external factors or forces influences the possibilities and necessities of profound change in the teacher's instructional pattern and how do these factors relate to each other?

The preexisting conceptual framework stresses experiential learning, teachers cognitions of teaching and learning , the structure of the local organization and the school leadership as important internal and external factors. There will however be an openness to other relevant factors during the interviews.

Sampling and methods.

The unit of analysis is upper secondary schools in Sweden.

In the first part of the study surveys will be sent out to head-masters, the management team and to a sample of teachers on every upper secondary school in Sweden. In the survey there are questions about instruction patterns, the structure of the local organization and about the leadership profile of the head-master. An instrument are being worked out to diagnose the three different leadership approaches descibed above. This diagnostic instrument will be a part of the survey.

There are two reasons for that quantitative approach:

1. To find a number of schools in which many teachers in a profound way, during the last three-year period, have changed their instructional pattern. It is not on beforehand defined what number of teachers that will be needed to meet the criterion "many". This will be decided when the data have been collected and analysed.

2. The data will be used for a quantitative study of possible correlations between educational changes, factors in the local organization and school leadership.

In the second part of the study qualitative methods will be used to study the research question in about six of the selected schools from the survey study.
The units of analysis in these schools are the teachers who have changed their way of working and the teachers who want to change their instructional pattern but experience so many obstacles that they have not yet succeded to make the changes. The nearest school leader to the interviewed teachers will also be interviewed as well as the head-master of the school. Teachers that have no thought of changing their instructional pattern will be left out in this study. The focus is on factors of importance for change. These content teachers would probably have been more interesting to interview if the study had concentrated on factors important fo the institutionalization of instructional patterns.

During the interviews the interviewer and the teacher are to construct three mind-maps. One describing the former instructional pattern and cognitions of teaching and learning, one describing the situation today and one describing the interplay between factors that have influenced the teacher in the changing process. Mind-maps from different teachers and schools will be compared and analysed.

Methodological difficulties.

There are som very important difficulties in this study that is related to the interview as a method to study very complex phenomena. The interviews build on the premise that it is possible to analyse peoples' verbal expression and from that draw conclusions about the cognitions they have about some specific phenomenon. That presupposes that the surface-structure, that is the verbalization, is a relevant representation of the underlying deep-structure, that is the cognitions you wish to know about, or that you know the principles of transformation when the deep structure is translated to the

surface-structure so it will be possible to understand the deep-structure. Bandler & Grinder (1975) and Grinder & Bandler (1976) claim that people make a number of conscious and unconcsious choices how to express their experiences and conclusions. This process result in a surface-structure with limitations as deletions, nominalizations and generalizations. To reach the deep-structure the interviewer must know how to handle incomplete surface-structures. If not, there is a big risk that the data from the inteviews will be false which leads to false conclusions.

Elbaz (1991) research about teachers' teaching and their thinking has shown that the complexity in the teaching situation makes it hard for the teachers to make concious and rational selections of action. They act intuitively from a general impression. It must be especially difficult for a teacher to describe what separate factors have influenced her from a very complex wholeness where this complex wholeness gives the separate units its meaning but in a way that seems to be beyond the human capacity to grip.

Another difficulty is the shortcomings in the teachers' professional language. Colnerud & Granström (1993) stress that it is important that the teachers develop their metalanguage within their profession to enhance their understanding of the teaching and learning situation.

These very important shortcomings with the interview as a metod to learn about the complex reality of teachers lead to the conclusion that other methods like surveys and quantitative methods are needed as a complement.

The conclusions about what factors influence teachers to change their instructional pattern are drawn from:

1. Comparisons between different schools from the results of the survey about educational patterns, aims and changes, local organization and school leadership. Quantitative methods for analysing the material will be used.

2. Comparisons between the mind-maps from teachers that have made changes with those that have not.

3. Analysis of the interviews with the school leaders. The schools will be categorized after type of organization and leader profile and compared to the mind-maps of the teachers from different schools. Correlations or other patterns are looked for.

SOME QUESTIONS ABOUT THE METHODOLOGICAL APPROACH.

What scientific constructs and variables permit an adequate representation of the force field concerning a teacher's instructional pattern?

What delimitations can be done and ought to be done, that make it possible to achieve scietific clarity and stringency without simplifying the complex reality in a way that makes the results of the research false or irrelevant to reality?

The psychological past is one of the variables that influences the present conceptions of the teachers and their understanding of the organization and the leadership of the school. How to handle that?

How reliable are the results from the interviews with the teachers about their complex reality?

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